Claims

1. Tyre for vehicle wheels, comprising a toroidal carcass that has a central crown portion and two axially opposite sidewalls ending in a pair of beads for anchoring the tyre (1) to a corresponding mounting rim, each bead comprising at least an annular reinforcing core (5, 6), a tread band (9) positioned at the crown and coaxially extended about said carcass, provided with a relief pattern for the rolling contact with the road, and a belt structure (8) coaxially interposed between said carcass and said tread band (9), said carcass comprising at least a carcass ply (7), said at least one carcass ply (7) having its own ends anchored to said annular reinforcing cores, wherein said at least one carcass ply (7) comprises a portion that encloses within it at least an insert (15) in proximity to said annular reinforcing cores (5, 6).

2. Tyre as claimed in claim 1, wherein said insert (15) comprises at least a elongated metallic element (13) having a plurality of coils radially superposed on themselves.

3. Tyre as claimed in claim 1, wherein said insert (15) comprises an elastomeric material.

4. Tyre as claimed in claim 2, wherein said elongated metallic element (13) is associated to a filler (14) made of elastomeric material.

5. Tyre as claimed in claim 3, wherein said elastomeric material has a hardness in Shore A degrees that may vary between 70 and 90.

6. Tyre as claimed in claim 1, wherein said carcass ply (7) comprises a plurality of strip-like elements that enclose said insert (15).

7. Tyre as claimed in claim 6, wherein each strip-like element is laid onto a toroidal support, whose outer profile substantially coincides with the radially inner surface of said tyre (1) with a circumferential pitch equal to twice the width of each strip-like element, in such a way as to enclose at least a part of said insert (15) together with the adjacent strip-like element.

8. Tyre as claimed in claim 2, wherein said elongated metallic element (13) comprises a plurality of wires, each of which has an ultimate tensile stress that may vary between 500 and 5000 N.

9. Tyre as claimed in claim 1, wherein said carcass has a neutral profile, lying in a radial straight section plane, axially extended from bead to bead, wherein said neutral profile intersects the straight section of a field (4) that encloses said annular reinforcing cores (5,6), said neutral profile along its development between said beads having a continuous curvature without inflexion points.

10. Tyre as claimed in claim 1, wherein said insert (15) has a height (Q) measured in radial direction, of between 1 and 35 mm.

11. Tyre as claimed in claim 1, wherein said tyre (1) comprises, in a radially external position to said annular reinforcing cores (5,6) at least a reinforcing insert (11).

12. Tyre as claimed in claim 1, wherein said tyre (1) comprises a reinforcing edge (12) in a position that is axially external and radially internal to at least one of said beads.